

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 42. (Cancelled)

43. (Currently Amended) A laser apparatus, comprising:

first and second reflectors defining a laser cavity;

a gain medium to emit a ~~[[beam]]~~light along an optical path between said first and second reflectors; ~~[[and]]~~

a compensating member coupled to at least one of said reflectors and configured to thermally adjust an optical path length between said reflectors~~[[.]]; and~~

a controller coupled to the compensating member to thermally control said compensating member.

44. (Previously Presented) The laser apparatus of claim 43, wherein said compensating member is to position said first reflector with respect to said second reflector.

45. (Currently Amended) The laser apparatus of claim 43, ~~further comprising~~ wherein said controller comprises a thermoelectric controller operatively coupled to said compensating member, said thermoelectric controller to thermally adjust a length of said compensating member.

46. (Currently Amended) The laser apparatus of claim 44 wherein the gain medium has first and second output facets, said first output facet to emit said ~~[[beam]]~~light along said optical path, said first reflector positioned in said optical path, said second output facet defining said second reflector, said first reflector and said second output facet defining said laser cavity.

47. (Previously Presented) The laser apparatus of claim 44, wherein said compensating member is thermally conductive.

48. (Previously Presented) The laser apparatus of claim 44, wherein said compensating member has a high coefficient of thermal expansion.

49. (Previously Presented) The laser apparatus of claim 46, wherein said gain medium and said first reflector are passively athermalized with respect to each other.

50. (Currently Amended) The laser apparatus of claim 43, further comprising:
a detector associated with said laser cavity and configured to detect losses associated with said laser cavity; and

a controller operatively coupled to said compensating element and said detector and configured to thermally adjust a length of said compensating member according to error signals derived from said detector.

51. (Previously Presented) The laser apparatus of claim 50, further comprising a dither element operatively coupled to said laser cavity and configured to introduce frequency modulation to said laser cavity.

52. – 57. (Cancelled)

58. (Currently Amended) A method for generating a tunable ~~coherent~~ optical output, comprising:

~~providing an external cavity laser having an excited gain medium with first and second output facets and emitting a coherent beam from said first output facet along an optical path, and an end mirror positioned in said optical path, said end mirror and said second output facet defining an external cavity; and~~

emitting the optical output from a first facet of a gain medium along an optical path;

reflecting said optical output from an end reflector positioned in said optical path,
said end reflector and a second facet of said gain medium defining a resonant cavity; and
actively controlling ~~adjusting~~ an optical path length of said ~~external resonant~~
cavity by thermally adjusting a length of a compensating member ~~that is coupled to said~~
end reflector. ~~mirror.~~

59. (Currently Amended) The method of claim 58, wherein said ~~thermally~~
~~adjusting~~ actively controlling said compensating member comprises heating or cooling
said compensating member with a thermoelectric controller coupled to said
compensating member.

60. (Currently Amended) The method claim 58, further comprising passively
athermalizing said ~~external resonant~~ cavity.

61. (Currently Amended) The method of claim 58, further comprising
monitoring ~~external~~ losses associated with said ~~external resonant~~ cavity.

62. (Previously Presented) The method of claim 61, wherein said monitoring
comprising monitoring voltage across said gain medium.

63. (Currently Amended) The method of claim 61, further comprising
introducing a frequency modulation into said ~~external resonant~~ cavity.

64. (Currently Amended) The method of claim 61, wherein said thermally
adjusting is carried out according to error signals derived from said monitoring of said
frequency modulation introduced to said ~~external resonant~~ cavity.

65. (Currently Amended) A laser apparatus, comprising:
first and second reflectors defining a laser cavity;
means to emit light along an optical path between said reflectors; and

means for actively thermally adjusting a length of the optical path between said reflectors.

66. (Currently Amended) The laser apparatus of claim 65, wherein said actively thermally adjusting means comprises a compensating member to thermally position said first reflector.

67. (Previously Presented) The laser apparatus of claim 66, wherein said thermally adjusting means further comprises a thermoelectric controller to thermally adjust a length of said compensating member.

68. (Previously Presented) The laser apparatus of claim 65, further comprising means for passively thermally stabilizing said laser cavity.